

Title	Name	Office	Email	Office Hours
Professor	Ryan K. Roeder	MRB 148	rroeder@nd.edu	Zoom by appointment
Teaching Assistant	Connor Evans	MRB 225	cevans7@nd.edu	Zoom by appointment
Class Time	TR 12:45-2:00 p.m., Corbett E202			
Course Calendar	webcal://p44-calendars.icloud.com/...			
Course Website	https://ame.nd.edu/.../rroeder/classes/ame60679			
Textbook	none			
Goals	The goal of this course is to provide a fundamental framework for understanding the science and application of nanoparticles in biomedicine. Emphasis will be given to the processing (synthesis and surface modification), structure (physical and molecular), material properties (biological, electrical, magnetic, mechanical, optical, X-ray, etc.), and functional performance that enables biomedical applications in drug delivery, diagnostic imaging, biosensing, and tissue regeneration.			
Grading	Module I (8/11-9/24)	Midterm Project 1 Homework	25% 15% 10%	in class Thursday, September 24 patent examination posted on website
	Module II (9/29-11/12)	Final Exam Project 2 Homework	25% 20% 5%	take home, due date TBD topic review presentation posted on website
Examinations	Exam format and content will be announced in class. Exams will be taken as scheduled, except in the case of illness or serious emergency. Contact the instructor <i>before the exam</i> to schedule a makeup exam.			
Projects	A project will be assigned in each course module. Each project will provide a student-selected opportunity for in-depth learning on nanoparticle science in biomedicine. A detailed description of each project will be posted on the course website and discussed in class.			
Homework	Use of mathematical software packages (e.g. Matlab, Mathcad, etc.) is encouraged. Discussion of homework problems is also encouraged; however, each student is expected to submit his or her own independent solution. Late homework will generally not be accepted except in the case of illness or serious emergency. Contact the instructor <i>before the due date</i> (if possible) to arrange an acceptable due date.			
Class Participation	Lectures will include discussion of readings and assignments. Preparation and participation, either in person or via Zoom, is essential.			
Academic Honesty	Students should be familiar with the Academic Code of Honor (http://honorcode.nd.edu). Working together, asking questions of classmates, or assisting others on exams is prohibited.			
COVID-19 Safety	All students are expected to comply with University policies for safe classroom instruction (https://here.nd.edu), including completing daily health checks, reporting seat locations, maintaining physical distancing, wearing a mask, abstaining from unsafe gatherings outside the classroom, and recognizing individual responsibility to care for the well-being of others.			